# LIFEBOTS EXCHANGE

*Creating a new reality of care and welfare through the inclusion of social robots*

**Coordinated by: NTNU (Norway)**

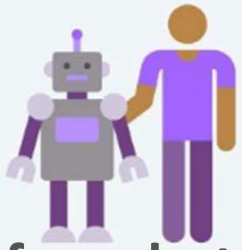
**1 April 2019 - 31 january 2025**

**Type of action: MSCA-RISE Marie Skłodowska-Curie Research and Innovation Staff Exchange**



*©2022 J. Artur Serrano (NTNU)*

# ABOUT THE PROJECT



## Are robots ready for society, and is society ready for robots?

- Robots increasingly used in the healthcare sector as a **potential solution** to current and future challenges
- Due to the **global population ageing**, by 2035 we will lack 12.9 million healthcare professionals (WHO: 2013)
- Social robots may benefit the **quality life and wellbeing** of care recipients, their families and professionals
- **Evidence** and much of the needed knowledge are still lacking. Strong interdisciplinarity and cross-sectorial research and innovation activity is needed.


*©2022 J. Artur Serrano (NTNU)*

# A knowledge hub for social robotics

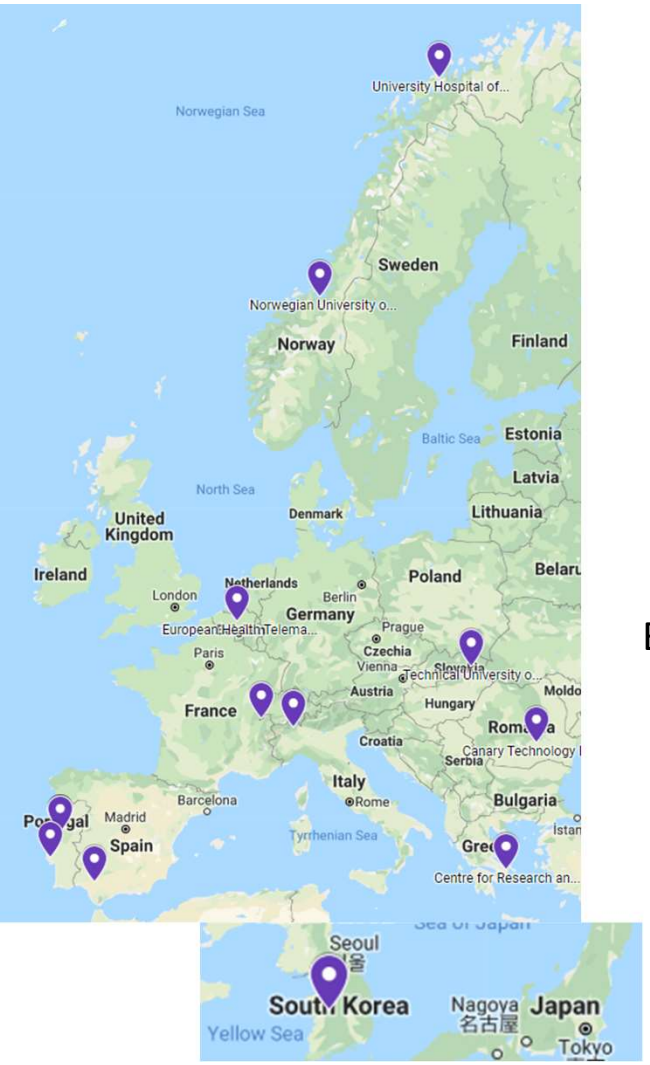
Aims:

(1) To **enhance the competencies** of involved staff members, refining and focusing their skills

(2) To **build a tri-sectoral network** involving academia, industry and users of technology

(3) to create **an enduring network that will outlive the grant funding**.


©2022 J. Artur Serrano (NTNU)




# The project in numbers

## 14 partners

4 universities, 4 companies, 3 research centers, 2 care institutions,
1 pan-European stakeholder organization on digital health

## 9 countries

Belgium, Greece, Italy, Norway, Portugal, Romania, South Korea, Spain, Switzerland

## 65 secondees

## 167 months of exchanges


©2022 J. Artur Serrano (NTNU)

# understand, foresee, plan, and forge

We need to be able to understand, foresee, plan, and forge, the impact of introducing social robots in care

Three areas will be researched:

(1) **care provided as medical practice -** this is the care given to patients in hospitals, clinics, rehabilitation centres and other medical facilities.

(2) **residential care** - this area refers to all care institutions accepting patient/clients as residents: elderly homes, nursing homes, special needs schools for children or adults, etc.

(3) **family care -** investigating how social robots can be implemented in the home, and as a part of domestic life.


©2022 J. Artur Serrano (NTNU)

# WELFARE

Statutory procedure or social effort designed to promote the basic physical and material well-being of people in need [oxford dictionary]


©2022 J. Artur Serrano (NTNU)

## Welfare Technology

### Norwegian report “Innovation in care”

*NOU 2011:11 "Innovasjon i omsorg"*

It primarily means technological assistance which aims at improving the **safety, security, social participation, mobility and physical and cultural activity**, and at strengthening the ability of **individuals** to fend for themselves in everyday life **despite illness, and social, mental or physical impairment or disability**.

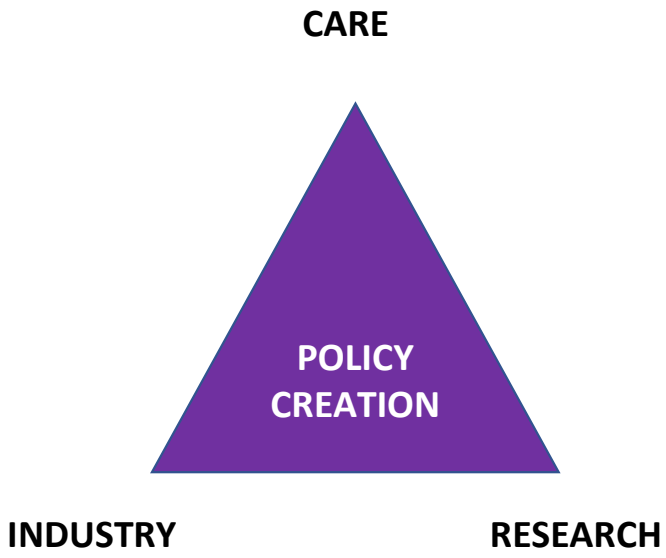

©2022 J. Artur Serrano (NTNU)

## Welfare Technology is a synergic combination of technological devices, social care services, and human competencies

Picture from Rælingen kommune


©2022 J. Artur Serrano (NTNU)

# Knowledge transfer model





©2022 J. Artur Serrano (NTNU)

# How are welfare technology and care robot related?

**Categories of Welfare Technologies**

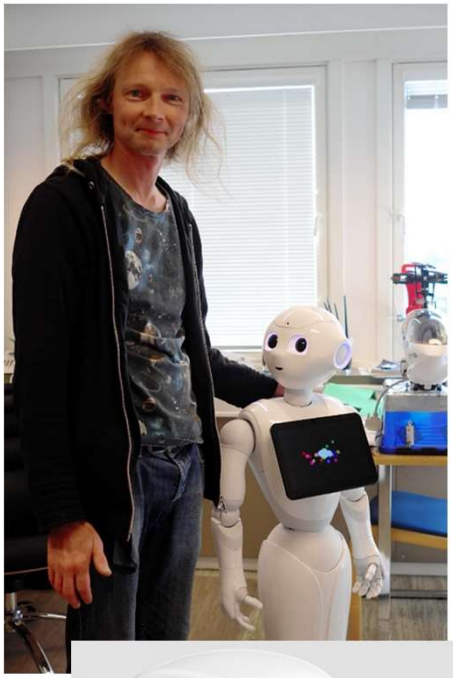
1. Social contact and participation
2. Safety
3. Security
4. Health management
5. Mobility
6. Activity and function compensation

**Functionalities of Care Robots**

1. Looking after – not surveillance
2. Calling for help - adverse situation detection
3. Co-worker – helping the person & helping the carer
4. Therapeutic aid
5. Intermediary
6. Companionship – a friend?


©2022 J. Artur Serrano (NTNU)

# Meet the robots

# Meet the cyborg

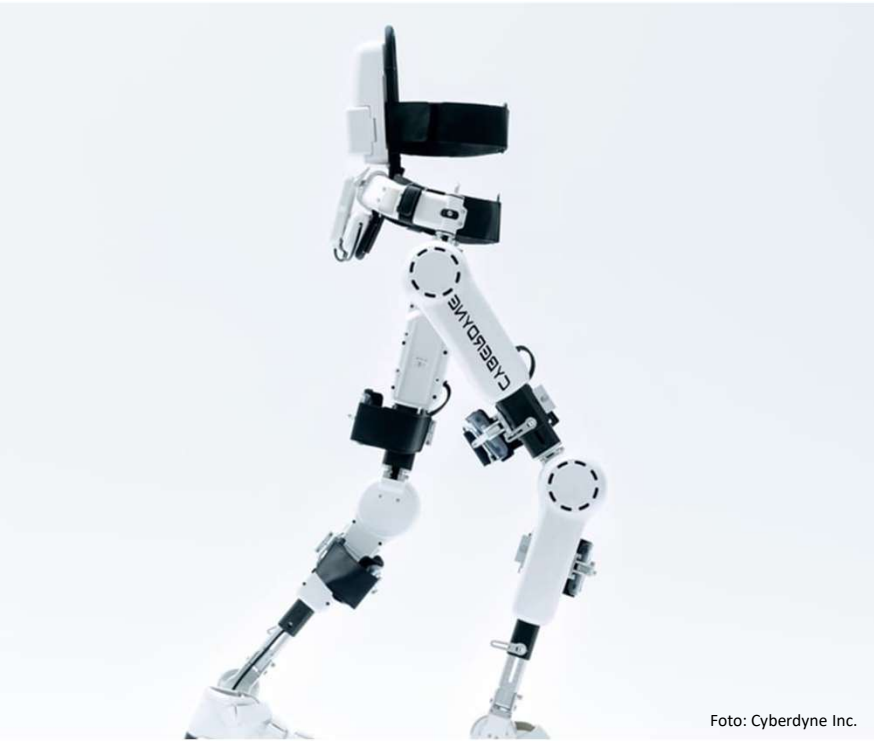
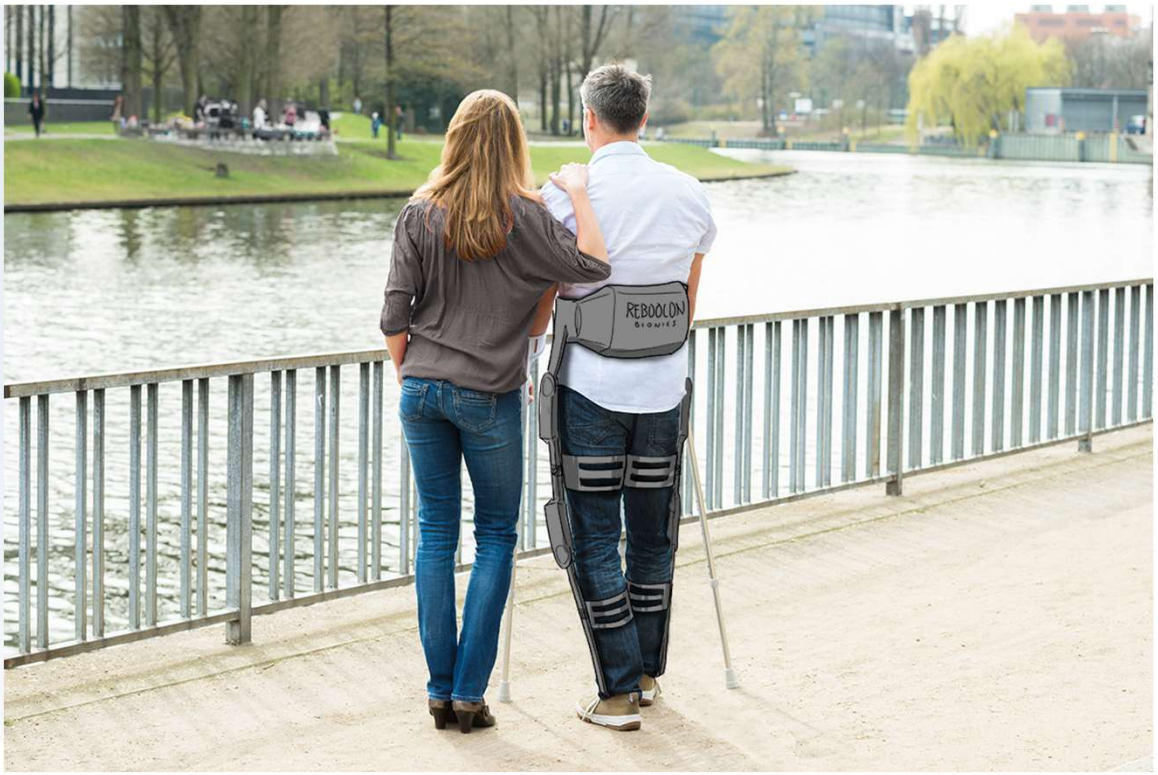



Foto: Cyberdyne Inc.






©2022 J. Artur Serrano (NTNU)

IMRO-LAB

**www.imrolab.eu**



©2023 Aitor Serrano (NTNU)

Enjoy
togetherness!

# Project coordinator


Artur Serrano

0047 96683435

artur.serrano@ntnu.no